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lundin mining

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Tuesday, February 18, 2014

Via PDF (Moody.jonathan@EPA.gov)
Confirmation First Class Mail

U.S. Environmental Protection Agency
Attention: Jonathan Moody
Water Enforcement & Compliance Assurance Branch
Water Division, WC-15J
77 West Jackson Blvd.
Chicago, IL 60604-3590

RE: January 2014 Monthly Discharge Report Pursuant to Paragraph 10 of July 2, 2013 Clean Water Act Section 308(a) Request for Information
Eagle Mine, LLC, Humboldt Mill Facility
Docket No. V-W-13-308-17

Dear Mr. Moody:

In accordance with Region 5 U.S. EPA's Clean Water Act Section 308(a) Information Request dated July 2, 2013 (Request) and subsequent correspondence between Regional Counsel Nicole Cantello and Dennis J. Donohue, Eagle Mine LLC (Eagle) hereby submits this monthly report of discharge of water from the Humboldt Tailings Disposal Facility (HTDF) in partial response to paragraph No. 10 of the Request, for the period from January 1 to January 31, 2014.

The enclosed tabular summary (Table 1) contains dates of water discharge from the HTDF, the total estimated volume of discharge and the peak rate of discharge. Because flow rates are measured or estimated on a daily basis, the peak rate of discharge is presented as a daily maximum flow.

Analytical results from January 9, 2014 sampling of the HTDF discharge are also summarized in Table 1. The January 9, 2014 sampling event represents a dry weather sampling event. A qualifying rainfall event did not occur in January of 2014. The laboratory analytical reports for the HTDF discharge samples, including relevant chain of custody documentation, are presented as Attachment I to this letter.

The HTDF discharge analytical results were compared to Michigan Rule 57 water quality standards. With the exception of mercury, no other exceedances of Rule 57 water quality standards were observed in the surface water discharge samples. Mercury results have fluctuated since sampling was initiated in July 2013, and the January result was just above the most stringent Rule 57 water quality criterion for that parameter, and the concentration of mercury observed in this sample is not inconsistent with storm water discharge.

Finally, we are also submitting surface water elevation data for the HTDF collected in January of 2014, as requested by Nicole Cantello in her September 3, 2013 electronic correspondence to Dennis Donohue. Water elevation readings collected through January 13th were measured in a piezometer installed in close proximity to the HTDF. For the remainder of January, water elevations were determined using a staff gage located on the north end of the HTDF. A hole is being maintained through the HTDF surface ice, adjacent to the staff gage, where water level measurements are taken.

Please do not hesitate to contact me with any questions regarding these documents or if you are in need of additional information.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person(s) who manage the system, or those person(s) directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Kristen A. Mariuzza
Manager, Environment & Permitting

HUMBOLDT TAILINGS DISPOSAL FACILITY
STORM WATER DISCHARGE
FLOW DATA

Discharge Date	Estimated Daily Discharge (gal) [1]	Notes
1/1/2014	1,152,000	
1/2/2014	1,152,000	
1/3/2014	1,152,000	
1/4/2014	1,152,000	
1/5/2014	1,152,000	
1/6/2014	1,152,000	
1/7/2014	1,152,000	
1/8/2014	1,152,000	
1/9/2014	1,152,000	
1/10/2014	1,152,000	
1/11/2014	1,152,000	
1/12/2014	1,152,000	
1/13/2014	1,152,000	
1/14/2014	1,152,000	
1/15/2014	1,152,000	
1/16/2014	1,152,000	
1/17/2014	1,152,000	
1/18/2014	1,152,000	
1/19/2014	1,152,000	
1/20/2014	1,152,000	
1/21/2014	1,152,000	
1/22/2014	1,436,800	
1/23/2014	1,554,200	
1/24/2014	1,583,200	
1/25/2014	1,503,700	
1/26/2014	1,623,350	
1/27/2014	1,623,350	
1/28/2014	1,152,000	
1/29/2014	1,152,000	
1/30/2014	1,152,000	
1/31/2014	1,152,000	
Total Estimated Monthly Discharge (gal):	38,124,600	
Maximum Estimated Daily Discharge Rate (gal):	1,623,350	

[1] Discharge rates are estimated based, in part, on pump capacity and pump operating time.

HUMBOLDT TAILINGS DISPOSAL FACILITY
STORM WATER DISCHARGE
DISCHARGE CHARACTERIZATION DATA

Sample Location		EM-HMP-009
Lab Sample ID		T14A091-01
Sampled By		AECOM
Analyzed By		Trace
Sample Date		1/9/2014
Inorganics	***Units***	
Antimony	*ug/L*	**5.7**
Arsenic	*ug/L*	<1.0
Barium	*ug/L*	**9.0**
Beryllium	*ug/L*	<1.0
Boron	*ug/L*	**83**
Cadmium	*ug/L*	<0.20
Chromium, Total	*ug/L*	<10
Cobalt	*ug/L*	**2.9**
Copper	*ug/L*	**1.7**
Lead	*ug/L*	<1.0
Lithium	*ug/L*	<10
Manganese	*ug/L*	**180**
Mercury (Inorganic)	*ng/L*	**1.4**
Molybdenum	*ug/L*	**11**
Nickel	*ug/L*	**14**
Selenium	*ug/L*	<1.0
Silver	*ug/L*	<0.5
Strontium	*ug/L*	**220**
Thallium	*ug/L*	<1.0
Zinc	*ug/L*	<10
Miscellaneous	***Units***	
Cyanide, total	*mg/L*	<0.0050
Fluoride	*mg/L*	**0.25**
Nitrogen, Ammonia	*mg/L*	<0.010
Phosphorus, Total	*mg/L*	<0.010
Sulfate	*mg/L*	**140**
Total Dissolved Solids	*mg/L*	**360**
Total Suspended Solids	*mg/L*	<10

Bolded value denotes parameter detected above detection limit

N - A positive result for this analyte was found in the method blank. Because the concentation in the blank was greater than 5% of the sample concentration, the sample result must be considered estimated.

--- Parameter not analyzed in sample

HUMBOLDT TAILINGS DISPOSAL FACILITY ("HTDF")
SURFACE WATER ELEVATION DATA

Measurement Date	HTDF Water Elevation (ft AMSL)
1/2/2014	1537.57
1/9/2014	1537.53
1/13/2014	1537.50
1/16/2014	1536.89
1/17/2014	1536.87
1/20/2014	1536.79
1/21/2014	1536.77
1/22/2014	1536.73
1/23/2014	1536.71
1/24/2014	1536.67
1/30/2014	1536.37

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February 04, 2014

Mr. Lance Lindberg
AECOM
1050 Wilson
Marquette, MI 49855

Phone: (906) 228-2333
Fax: (906) 226-8371

RE: Trace Project T14A091
Client Project Humbolt Mill / 60305471

Dear Mr. Lindberg:

Enclosed are your analytical results. The results of this report relate only to the samples listed in the body of this report.

All reports were examined through Trace's validation process to ensure that requirements for quality and completeness were satisfied. All reported analytical results were obtained in accordance with the methods referenced on the reports. Every practical effort was made to meet the reporting limit specifications for this work, however, some results may have raised reporting limits to correct for percent solids.

For clients that require NELAC Accreditation, Trace certifies that these test results meet all requirements of the NELAC Standard, except for those analytes with a "N" notation. These analytes have not been evaluated by NELAC at Trace's discretion and will not be reported unless requested by client.

If you have questions concerning this report, please contact me at 231.773.5998 or by email at jmink@trace-labs.com.

Sincerely,

Jon Mink
Senior Project Manager

Enclosures

ACCREDITED IN ACCORDANCE WITH nelac

NJDEP Accreditation No. MI008 PADEP Accreditation No. 68-04471

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SAMPLE SUMMARY

Trace Project ID: T14A091
Client Project ID: Humbolt Mill / 60305471

Trace ID	Sample ID	Matrix	Collected By	Date Collected	Date Received
T14A091-01	EM-HMP-009	Aqueous	ajp	01/09/14 09:45	01/10/14 11:28

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AN EXPLANATION OF TERMS AND SYMBOLS WHICH MAY OCCUR IN THIS REPORT

DEFINITIONS

LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MS	Matrix Spike
MSD	Matrix Spike Duplicate
RPD	Relative Percent Difference
DUP	Matrix Duplicate
RDL	Reporting Detection Limit
MCL	Maximum Contamination Limit
TIC	Tentatively Identified Compound
<, ND or U	Indicates the compound was analyzed for but not detected
*	Indicates a result that exceeds its associated MCL or Surrogate control limits
N	Indicates that the compound has not been evaluated by NELAC
NA	Indicates that the compound is not available.

DATA QUALIFIERS

Trace ID: T042499-BS1

Analysis: EPA 200.8 Rev. 5.4

Cadmium	Note 112 : The LCS recovery was out of control high. Because there were no positive results for this analyte in this QC batch, no data require qualification.
Thallium	Note 112 : The LCS recovery was out of control high. Because there were no positive results for this analyte in this QC batch, no data require qualification.

Trace ID: T042696-MS1

Analysis: SM 4500-P E

Phosphorus-Total (as P)	Note 230 : The MS and MSD were out of control high. Because there was no positive result in the non-spiked version of the sample, no data require qualification.

Trace ID: T042696-MSD1

Analysis: SM 4500-P E

Phosphorus-Total (as P)	Note 230 : The MS and MSD were out of control high. Because there was no positive result in the non-spiked version of the sample, no data require qualification.

Trace ID: T14A091-01

Analysis: SM 4500-H+ B-00

pH	Note 511 : The sample was received and, therefore, analyzed beyond the established EPA hold time. The result must be considered estimated.
pH	Note pH : The pH was analyzed at 11:34

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ANALYTICAL RESULTS

Trace Project ID: T14A091
Client Project ID: Humbolt Mill / 60305471

Trace ID: T14A091-01 Date Collected: 01/09/14 09:45 Matrix: Aqueous
Sample ID: EM-HMP-009 Date Received: 01/10/14 11:28

PARAMETERS	RESULTS	UNITS	RDL	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	MCL
METALS, TOTAL										
Analysis Method: EPA 1631E										
Batch: T042493										
Mercury	**1.4**	**ng/L**	**0.50**	**1**	**01/10/14**	**klm**	**01/15/14**	**klm**		
Analysis Method: EPA 200.7 Rev. 4.4										
Batch: T042499										
Boron	**83**	**ug/L**	**40**	**1**	**01/13/14**	**rlb**	**01/13/14**	**dtm**		
Lithium	<10	ug/L	10	1	01/13/14	rlb	01/13/14	dtm	N	
Strontium	**220**	**ug/L**	**50**	**1**	**01/13/14**	**rlb**	**01/13/14**	**dtm**		
Analysis Method: EPA 200.8 Rev. 5.4										
Batch: T042499										
Antimony	**5.7**	**ug/L**	**1.0**	**1**	**01/13/14**	**rlb**	**01/16/14**	**klm**		
Arsenic	<1.0	ug/L	1.0	1	01/13/14	rlb	01/16/14	klm		
Barium	**9.0**	**ug/L**	**5.0**	**1**	**01/13/14**	**rlb**	**01/16/14**	**klm**		
Beryllium	<1.0	ug/L	1.0	1	01/13/14	rlb	01/16/14	klm		
Cadmium	<0.20	ug/L	0.20	1	01/13/14	rlb	01/16/14	klm		
Chromium	<10	ug/L	10	1	01/13/14	rlb	01/16/14	klm		
Cobalt	**2.9**	**ug/L**	**2.0**	**1**	**01/13/14**	**rlb**	**01/16/14**	**klm**		
Copper	**1.7**	**ug/L**	**1.0**	**1**	**01/13/14**	**rlb**	**01/16/14**	**klm**		
Lead	<1.0	ug/L	1.0	1	01/13/14	rlb	01/16/14	klm		
Manganese	**180**	**ug/L**	**1.0**	**1**	**01/13/14**	**rlb**	**01/16/14**	**klm**		
Molybdenum	**11**	**ug/L**	**1.0**	**1**	**01/13/14**	**rlb**	**01/16/14**	**klm**	N	
Nickel	**14**	**ug/L**	**5.0**	**1**	**01/13/14**	**rlb**	**01/16/14**	**klm**		
Selenium	<1.0	ug/L	1.0	1	01/13/14	rlb	01/16/14	klm		
Silver	<0.50	ug/L	0.50	1	01/13/14	rlb	01/16/14	klm		
Thallium	<1.0	ug/L	1.0	1	01/13/14	rlb	01/16/14	klm		
Zinc	<10	ug/L	10	1	01/13/14	rlb	01/16/14	klm		

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ANALYTICAL RESULTS

Trace Project ID: T14A091
Client Project ID: Humbolt Mill / 60305471

Trace ID: T14A091-01 Date Collected: 01/09/14 09:45 Matrix: Aqueous
Sample ID: EM-HMP-009 Date Received: 01/10/14 11:28

PARAMETERS	RESULTS	UNITS	RDL	DILUTION	PREPARED	BY	ANALYZED	BY	NOTES	MCL
WET CHEMISTRY										
Analysis Method: ASTM D7511-09e2										
Batch: T042568										
Cyanide (total)	<0.0050	mg/L	0.0050	1	01/15/14	sv	01/15/14	sv		
Analysis Method: EPA 300.0 Rev. 2.1										
Batch: T042515										
Fluoride	**0.25**	**mg/L**	**0.10**	**5**	**01/13/14**	**sv**	**01/14/14**	**sv**		
Sulfate as SO4	**140**	**mg/L**	**5.0**	**10**	**01/13/14**	**sv**	**01/14/14**	**sv**		
Analysis Method: EPA 350.1 Rev. 2.0										
Batch: T042534										
Ammonia as N	<0.010	mg/L	0.010	1	01/14/14	as	01/17/14	as		
Analysis Method: SM 2540 C-97										
Batch: T042511										
Total Dissolved Solids	**360**	**mg/L**	**10**	**1**	**01/13/14**	**sv**	**01/13/14**	**sv**		
Analysis Method: SM 2540 D-97										
Batch: T042500										
Total Suspended Solids	<10	mg/L	10	1	01/13/14	sv	01/13/14	sv		
Analysis Method: SM 4500-H+ B-00										
Batch: T042554										
pH	**7.73**	**pH Units**		**1**	**01/10/14**	**jrw**	**01/10/14**	**jrw**	511, pH	
Analysis Method: SM 4500-O C-01										
Batch: T042494										
Dissolved Oxygen	**14**	**mg/L**	**0.080**	**1**	**01/10/14**	**sv**	**01/10/14**	**sv**	N	
Analysis Method: SM 4500-P E										
Batch: T042696										
Phosphorus-Total (as P)	<0.010	mg/L	0.010	1	01/21/14	sv	01/22/14	sv	N	

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QUALITY CONTROL RESULTS

Trace Project ID: T14A091

Client Project ID: Humbolt Mill / 60305471

QC Batch: T042493
QC Batch Method: EPA 1631E

Analysis Description: Mercury, Total, Low Level
Analysis Method: EPA 1631E

METHOD BLANK: T042493-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Mercury	ng/L	<0.50	0.50	

LABORATORY CONTROL SAMPLE: T042493-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Mercury	ng/L	25.0	23.9	96	77-123	

Trace Project ID: T14A091

Client Project ID: Humbolt Mill / 60305471

QC Batch: T042499
QC Batch Method: EPA 200.2

Analysis Description: Strontium, Total
Analysis Method: EPA 200.7 Rev. 4.4

METHOD BLANK: T042499-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Boron	ug/L	<40	40	
Lithium	ug/L	<100	100	
Strontium	ug/L	<1000	1000	

LABORATORY CONTROL SAMPLE: T042499-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Boron	ug/L	1600	1490	93	85-115	
Strontium	ug/L	1600	1640	102	85-115	

Trace Project ID: T14A091

Client Project ID: Humbolt Mill / 60305471

QC Batch: T042499
QC Batch Method: EPA 200.2

Analysis Description: Beryllium, Total
Analysis Method: EPA 200.8 Rev. 5.4

METHOD BLANK: T042499-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Silver	ug/L	<0.50	0.50	
Arsenic	ug/L	<1.0	1.0	
Barium	ug/L	<5.0	5.0	

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METHOD BLANK: T042499-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Beryllium	ug/L	<1.0	1.0	
Cadmium	ug/L	<0.20	0.20	
Cobalt	ug/L	<2.0	2.0	
Chromium	ug/L	<10	10	
Copper	ug/L	<1.0	1.0	
Manganese	ug/L	<1.0	1.0	
Molybdenum	ug/L	<1.0	1.0	
Nickel	ug/L	<5.0	5.0	
Lead	ug/L	<1.0	1.0	
Antimony	ug/L	<1.0	1.0	
Selenium	ug/L	<1.0	1.0	
Thallium	ug/L	<1.0	1.0	
Zinc	ug/L	<10	10	

LABORATORY CONTROL SAMPLE: T042499-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Silver	ug/L	20.0	21.3	106	85-115	
Arsenic	ug/L	100	108	108	85-115	
Barium	ug/L	1600	1790	112	85-115	
Beryllium	ug/L	200	218	109	85-115	
Cadmium	**ug/L**	**50.0**	**57.8**	**116**	**85-115**	**112**
Cobalt	ug/L	1600	1790	112	85-115	
Chromium	ug/L	50.0	56.0	112	85-115	
Copper	ug/L	1600	1800	113	85-115	
Manganese	ug/L	1600	1770	111	85-115	
Molybdenum	ug/L	1600	1760	110	85-115	
Nickel	ug/L	1600	1820	114	85-115	
Lead	ug/L	100	113	113	85-115	
Antimony	ug/L	100	114	114	85-115	
Selenium	ug/L	100	111	111	85-115	
Thallium	**ug/L**	**100**	**116**	**116**	**85-115**	**112**
Zinc	ug/L	1600	1790	112	85-115	

Trace Project ID: T14A091
Client Project ID: Humbolt Mill / 60305471

QC Batch: T042568
QC Batch Method: ASTM D7511-09e2

Analysis Description: Cyanide, Total
Analysis Method: ASTM D7511-09e2

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METHOD BLANK: T042568-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Cyanide (total)	mg/L	<0.0050	0.0050	

LABORATORY CONTROL SAMPLE: T042568-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Cyanide (total)	mg/L	0.100	0.0979	98	90-110	

SAMPLE DUPLICATE: T042568-DUP1 Original: **T14A091-01**

Parameter	Units	Original Result	DUP Result	RPD	Max RPD	Notes
Cyanide (total)	mg/L	0.00401	0.00459	13	200	

Trace Project ID: T14A091
Client Project ID: Humbolt Mill / 60305471

QC Batch: T042515
QC Batch Method: IC Prep W
Analysis Description: Fluoride
Analysis Method: EPA 300.0 Rev. 2.1

METHOD BLANK: T042515-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Fluoride	mg/L	<0.10	0.10	

LABORATORY CONTROL SAMPLE: T042515-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Fluoride	mg/L	0.500	0.491	98	90-110	

Trace Project ID: T14A091
Client Project ID: Humbolt Mill / 60305471

QC Batch: T042521
QC Batch Method: IC Prep W
Analysis Description: Sulfate
Analysis Method: EPA 300.0 Rev. 2.1

METHOD BLANK: T042521-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Sulfate as SO4	mg/L	<2.5	2.5	

LABORATORY CONTROL SAMPLE: T042521-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Sulfate as SO4	mg/L	2.50	2.69	108	90-110	

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Trace Project ID: T14A091
Client Project ID: Humbolt Mill / 60305471

QC Batch: T042534
QC Batch Method: EPA 350.1 Rev. 2.0
Analysis Description: Nitrogen, Ammonia
Analysis Method: EPA 350.1 Rev. 2.0

METHOD BLANK: T042534-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Ammonia as N	mg/L	<0.010	0.010	

LABORATORY CONTROL SAMPLE: T042534-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Ammonia as N	mg/L	0.500	0.457	91	90-110	

Trace Project ID: T14A091
Client Project ID: Humbolt Mill / 60305471

QC Batch: T042511
QC Batch Method: SM 2540 C-97
Analysis Description: Total Dissolved Solids
Analysis Method: SM 2540 C-97

METHOD BLANK: T042511-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Total Dissolved Solids	mg/L	<10	10	

LABORATORY CONTROL SAMPLE: T042511-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Total Dissolved Solids	mg/L	500	508	102	80-120	

SAMPLE DUPLICATE: T042511-DUP1 Original: **T14A091-01**

Parameter	Units	Original Result	DUP Result	RPD	Max RPD	Notes
Total Dissolved Solids	mg/L	358	354	1	10	

Trace Project ID: T14A091
Client Project ID: Humbolt Mill / 60305471

QC Batch: T042500
QC Batch Method: SM 2540 D-97
Analysis Description: Total Suspended Solids
Analysis Method: SM 2540 D-97

METHOD BLANK: T042500-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Total Suspended Solids	mg/L	<10	10	

CERTIFICATE OF ANALYSIS

TRACE
the science of compliance

phone 231.773.5998
toll-free 800.733.5998
fax 231.773.6537

Trace Analytical Laboratories, Inc.
2241 Black Creek Road
Muskegon, MI 49444-2673
info@trace-labs.com
www.trace-labs.com

LABORATORY CONTROL SAMPLE: T042500-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Total Suspended Solids	mg/L	50.0	46.0	92	85-115	

SAMPLE DUPLICATE: T042500-DUP1 Original: **T14A091-01**

Parameter	Units	Original Result	DUP Result	RPD	Max RPD	Notes
Total Suspended Solids	mg/L	0.00	<10		10	

Trace Project ID: T14A091
Client Project ID: Humbolt Mill / 60305471

QC Batch: T042554
QC Batch Method: *** DEFAULT PREP ***
Analysis Description: pH, SM 4500
Analysis Method: SM 4500-H+ B-00

Trace Project ID: T14A091
Client Project ID: Humbolt Mill / 60305471

QC Batch: T042494
QC Batch Method: SM 4500-O C-01
Analysis Description: Dissolved Oxygen
Analysis Method: SM 4500-O C-01

Trace Project ID: T14A091
Client Project ID: Humbolt Mill / 60305471

QC Batch: T042696
QC Batch Method: SM 4500-P E
Analysis Description: Total Phosphorus
Analysis Method: SM 4500-P E

METHOD BLANK: T042696-BLK1

Parameter	Units	Blank Result	Reporting Limit	Notes
Phosphorus-Total (as P)	mg/L	<0.010	0.010	

LABORATORY CONTROL SAMPLE: T042696-BS1

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Notes
Phosphorus-Total (as P)	mg/L	0.100	0.0952	95	85-116	

MATRIX SPIKE / MATRIX SPIKE DUPLICATE: T042696-MSD1 Original: **T14A091-01**

Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Notes
Phosphorus-Total (as P)	**mg/L**	**0**	**0.100**	**0.131**	**0.125**	**131**	**125**	**84-112**	**4**	**7**	**230**

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CHAIN-OF-CUSTODY RECORD

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Page 1 of 1

TRACE ID NO. T14A091

TRACE USE ONLY
Logged By: BMC Checked By: [illegible]
Received on ice: (Yes) No Preservative Checked: (Yes) No N/A
Soil Volatiles Preserved: MeOH Low Level Lab Sampling Time:

Report Results To:
Client Name: AECOM
Contact Person: Lance Lindberg
Mailing Address: 1050 W. Wilson St.
City, State, Zip Code: Marquette, MI 49855
Phone: 906.226.4980 Fax: 906.226.8371
Email Address: lance.lindberg@aecom.com
Cell #: — Sampled by: AJD
Project Name & #: Humboldt Mill / 60305471

Regulatory Requirements
MERA TMDL's ☐
Drinking Water ☐
NPDES ☐
USACE ☐
Special ☐

Turnaround Requirements
Standard ☒
3-4 Day (RUSH)* ☐
24-48 Hour (RUSH)* ☐
* Requires prior approval

Matrix Key
S = Soil WI = Wipes
W = Water LW = Liquid Waste
SE = Sediment A = Air
OI = Oil D = Drinking Water
SO = Solid Waste SL = Sludge

Bill To:
Billing Address (if different) same
City, State, Zip Code
Attn: Phone: PO #:

Request for Analytical Services

ANALYSIS REQUESTED

TRACE NO.	DATE TAKEN	TIME TAKEN	METALS FIELD FILTERED	CLIENT SAMPLE ID	MATRIX	NUMBER OF CONTAINERS	Total Sb, As, Ba, Be, B, Cd, Cr, Co, Cu, Fe, Pb, Li, Mn, Mo, Ni, Se, Ag, Sr, Tl, Zn	Total Cyanide	Total ULL Hg	Total Sulfate	TDS & TSS	Total Phosphorus	Ammonia Nitrogen (as N)	DO & pH		REMARKS	Possible Health Hazard
01	1-9-14	0845	N	EM-HMP-009	W	6	X	X	X	X	X	X	X	X	X		

Please Sign

Item #	RELEASED BY	RECEIVED BY	DATE	TIME	Item #	RELEASED BY	RECEIVED BY	DATE	TIME
1)	[signature]	UPS	1-9-14	1700	3)				
2)	UPS	BMcDonald	1/10/14	1128	4)				

In executing this Chain of Custody, the client acknowledges acceptance of the terms and conditions of the agreement as set forth at http://www.trace-labs.com/cocterms.php

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SAMPLE LOG IN CHECKLIST

Trace ID #: T14A091 Date: 11/10/14 Package Description: Cooler

Client Name: AECOM Time: 11:28 Logged in by: BMC

Cooler Receipt

Cooler/samples delivered by: Trace courier ☐ Hand delivered ☐ Name of delivery person: ____

Commercial courier ☐ UPS ☒ FED EX ☐ US Mail ☐

Tracking Number: ☐ Not Applicable

Tracking #: 1ZRA0240199212007

COC Seals present and intact on cooler? No ☐ Yes ☒ ☐ Not Applicable

Custody seals signed by Client? No ☐ Yes ☒ Client custody seal # (if applicable): ____

Coolant and Temperature

Type of Coolant Used

Slurry w/ crushed, cubed, or chip ice? ☐

Multiple bags of ice around samples? ☒

Ice Packs/ Blue Ice : ☐

No Coolant Present: ☐

Cooler Temperature

Correction Factor: IR Thermometer +0.2 °C

Digital Stick Thermometer -0.1 °C

Temperature Blank: NONE °C (Use Digital Stick Thermometer)

Range of 3 samples: 1-2 °C (Use IR Thermometer)

Melt Water: ____ °C (IR or Stick Therm. - circle one)

Ice still present upon receipt: ☒ Yes ☐ No

General

	Yes	No	NA	Comments
ll bottles arrived unbroken with labels in good condition?	☒	☐	☐	
Each sample point is in a sealed plastic bag?	☒	☐	☐	
Labels filled out completely?	☒	☐	☐	
All bottle labels agree with Chain of Custody (COC)?	☒	☐	☐	
Sufficient sample to run tests requested?	☒	☐	☐	
pH checked and samples at correct pH?	☒	☐	☐	See Below*
Correct preservative added to samples?	☒	☐	☐	
Air bubbles absent from VOAs?	☐	☐	☒	
COC filled out properly and signed by client?	☒	☐	☐	
COC signed in by TRACE sample custodian?	☒	☐	☐	
Was project manager called and samples discussed?	☐	☐	☒	

tes:

*EMD pH Test Strips Used:

☐ pH 0-2.5 Lot: IHC376384 ☐ pH 11.0-13.0 Lot: HC949254

☐ Other: ____

Form 70-A.10
Effective 8/26/13

TRACE Analytical Laboratories, Inc.

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